## Application for Federal Assistance SF-424

| * 1. Type of Submission: | * 2. Type of Application: | * If Revision, select appropriate letter(s): |
|---|---|---|
| ❍ Preapplication | ● New | |
| ● Application | ❍ Continuation | * Other (Specify) |
| ❍ Changed/Corrected Application | ❍ Revision | |

| * 3. Date Received: | 4. Applicant Identifier: |
|---|---|
| | |

| 5a. Federal Entity Identifier: | * 5b. Federal Award Identifier: |
|---|---|
| | |

**State Use Only:**

| 6. Date Received by State: | 7. State Application Identifier: |
|---|---|
| | |

**8. APPLICANT INFORMATION:**

| | |
|---|---|
| * a. Legal Name: | San Jose State University |

| * b. Employer/Taxpayer Identification Number (EIN/TIN): | * c. Organizational DUNS: |
|---|---|
| 44-0414438 | 050520840 |

**d. Address:**

| | |
|---|---|
| * Street1: | One Washington Square |
| Street2: | |
| * City: | San Jose |
| County: | Santa Clara |
| * State: | CA: California |
| Province: | |
| * Country: | USA: UNITED STATES |
| * Zip / Postal Code: | 95192-0100 |

**e. Organizational Unit:**

| Department Name: | Division Name: |
|---|---|
| SJSU Research Foundation | University Programs |

**f. Name and contact information of person to be contacted on matters involving this application:**

| | | | |
|---|---|---|---|
| Prefix: | Ms. | * First Name: | Jeanne |
| Middle Name: | | | |
| * Last Name: | Dittman | | |
| Suffix: | | | |

| | |
|---|---|
| Title: | Interim Director, Pre-Award |
| Organizational Affiliation: | San Jose State University Research Foundation |
| * Telephone Number: | 408-924-1434 |
| Fax Number: | 408-924-1496 |
| * Email: | foundation-osp@sjsu.edu |

**Funding Opportunity Number:**

**Received Date: Time Zone: GMT-5**

## Application for Federal Assistance SF-424

**9. Type of Applicant 1: Select Applicant Type:**

H: Public/State Controlled Institution of Higher Education

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Environmental Protection Agency

**11. Catalog of Federal Domestic Assistance Number:**

66.461

CFDA Title:

Regional Wetland Program Development Grants

*** 12. Funding Opportunity Number:**

EPA-REG9-WP-14

* Title:

FY14 Region 9 Wetland Program Development Grants

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

*** 15. Descriptive Title of Applicant's Project:**

Development of a Bar-built estuary monitoring system and resource management prioritization tool for California State Parks (Track 2 Applicant)

Attach supporting documents as specified in agency instructions.

## Application for Federal Assistance SF-424

**16. Congressional Districts Of:**

* a. Applicant: CA-019 * b. Program/Project: CA-020

Attach an additional list of Program/Project Congressional Districts if needed.

**17. Proposed Project:**

* a. Start Date: 12/01/2014 * b. End Date: 11/30/2017

**18. Estimated Funding ($):**

| | |
|---|---|
| * a. Federal | 322,800.00 |
| * b. Applicant | 0.00 |
| * c. State | 0.00 |
| * d. Local | 0.00 |
| * e. Other | 107,600.00 |
| * f. Program Income | 0.00 |
| * g. TOTAL | 430,400.00 |

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

● a. This application was made available to the State under the Executive Order 12372 Process for review on 04/01/2014.

❍ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

❍ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation and attach.)**

❍ Yes ● No

**21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☑ **** I AGREE**

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**

Prefix: * First Name: Pamela

Middle Name: C

* Last Name: Stacks

Suffix:

* Title: AVP, Graduate Studies and Research

* Telephone Number: 4089242428 Fax Number: 4089241496

* Email: Foundation-OSP@sjsu.edu

* Signature of Authorized Representative: Pamela Stacks * Date Signed:

## Project Narrative File(s)

| FileName | MimeType |
| --- | --- |
| projectnarrative21001753770.pdf | application/pdf |

Project Title: Development of a Bar-built estuary monitoring system and resource management prioritization tool for California State Parks (Track 2 Applicant)

Core Elements and Activities (EPA):

Core Element 1- Monitoring and Assessment: Set 2 (Strategy Development-Actions b,c,e) and Set 3 Strategy Refinement- Actions c,d); Core Element 3- Restoration and Protection: Set 1 (Goals-Actions b, c); Set 3 (Develop Strategy for Restoration-Actions a, b)

Core Elements and Activities (California WPP):

State Water Board Planned Actions: Monitoring, Assessment and Reporting- Action Item 14 (CRAM training, pg. 10), Action Item 19 (WRAMP Partnership Support, pg. 10)

Applicant: San Jose State University DUNS #: 050520840

Key Personnel and Contact Information:

Central Coast Wetlands Group (CCWG) at Moss Landing Marine Laboratories
Ross Clark: (831) 771-4411, rclark@mlml.calstate.edu
Kevin O'Connor: (831) 771-4495, koconnor@mlml.calstate.edu

Geographic Location: State of California-entire coastline

Project Cost and Requested Funding:

Project Cost: $430,400
Requested Funding: $322,800
Matching Funds: $107,600

Abstract:
Bar-built estuaries (BBEs) are unique coastal wetlands that form at the mouths of coastal watersheds and provide a great diversity of habitat and ecosystem services. These important coastal wetlands provide critical habitat for many commercially important and endangered species and make up 51% of all coastal confluences in California. With a growing population, often centered on coastal confluences, these habitats experience varying degrees of alteration. Future alterations, increasing demand for freshwater and climate or sea level change further threatens BBEs and the services they provide. The diversity and dynamics of ecological services, and how they are affected by anthropogenic alteration is poorly understood. Understanding these details is necessary to ensure the long-term health and productivity of these coastal ecosystems. California State Parks (CSP) manages nearly half of California's BBEs. Thus, by enhancing the capacity of State Parks to assess and manage wetlands in a cost-effective manner we will provide a major step towards increasing and preserving the quantity and quality of California's wetlands. We propose to establish a wetland habitat restoration and management prioritization tool. We will create a comprehensive georeferenced database of BBE resources managed by CSP. We will combine these data with estuary water elevation, CRAM assessments and watershed stressor data to link watershed stress and local condition. This watershed approach will inform how watershed and/or local actions will increase habitat function within BBEs, and coupled with historical analyses will provide a valuable management prioritization framework to direct management of wetlands by CSP.

B. PROJECT DESCRIPTION:

*1. PROGRAM PRIORITIES*

With a mission to coordinate the advancement of wetland science and management, the Central Coast Wetlands Group (CCWG) has implemented EPA Core Element 1 (Monitoring and Assessment) Set 1 actions of *selecting core sets of indicators to represent wetland condition and develop monitoring designs* (i.e. CRAM for Bar-built Estuaries (BBEs)) and has *identified how wetland data can be used to implement watershed planning* through the *completion of our previous EPA grant (Award # CD-00T20101-0).*

Here we propose to build off of these successes to directly address Set 2 (Strategy and Development):

Action b – We have identified California State Parks (CSP) and California Coastal Commission (CCC) staff as key stakeholders in wetland management, and propose to help them integrate a Level 1-2-3 wetlands monitoring strategy into existing monitoring efforts and management decisions.

Action e – We will partner with CSP and staff to analyze monitoring data to evaluate wetlands extent and condition/function and to inform decision-making by *analyzing changes in wetland extent and condition relative to reference conditions*. Specifically we will develop a comprehensive database for all State Parks managed BBEs, directly monitor 30 representative BBEs, and analyze data to develop a management prioritization tool for State Parks.

And Set 3 (Strategy Refinement):

Action c – The proposed monitoring system will dramatically increase our understanding of the complexities and dynamics of BBEs. This will help to *establish metrics for gauging restoration success, and evaluate the ecosystem services provided by individual wetlands* and how they change through time. This information will help CSP and regulatory staff, and set a precedent to *improve the site-specific management of wetland resources.*

Action d – By combining CRAM with GIS based watershed analyses and historical habitat change analysis, this project will *identify and prioritize management areas, inform broader watershed activities* and how they affect BBE condition to *develop geographically-defined wetland protection, restoration, and management.* By maintaining and updating these data in the comprehensive database, CSP will be able to *evaluate progress towards meeting*

*wetland objectives.*

This project further directly addresses Core Element III (Voluntary Restoration and Protection) within Set 1: (Goals):

Action b – We will apply a methodology using a combination of GIS, CRAM and water level/marsh plain inundation monitoring to develop a tool to identify and prioritize restoration sites within an estuary and its associated watershed. We will train CSP staff in our developed restoration prioritization tool to facilitate watershed planning in their resource management. We will share the results of the prioritization tool *with other organizations* involved in wetland protection and restoration through outreach at the California Estuary Monitoring Workgroup (CEMW) and California Wetland Monitoring Workgroup (CWMW) quarterly meetings.

Action c – Our BBE monitoring system and database, created from previous and proposed BBE studies, will *provide reference sites* to the state wetland reference network for wetland monitoring *and guidance to encourage restoration outcomes that recreate natural self-sustaining systems and reduce the need for ongoing management*. We will work with CSP staff *to establish measures of restoration success (EPA Level 1-2-3 monitoring framework),* and will *train restoration partners to use guidance techniques* developed as a part of this project.

Additionally, this project will help meet the California WPP goal to: *"Increase the abundance and diversity of California's wetlands and riparian areas, and sustain and enhance the delivery of ecosystem services."* Additionally, this project will help two state partners to utilize a *"watershed approach*." We address State Water Board Core Element: Monitoring, Assessment, and Reporting: Action Item 14, pg. 10 (CRAM Training) and Action Item 19, pg. 10 (WRAMP Partnership Support) We will provide CRAM training to CSP staff and help with the implementation of a Level 1-2-3 monitoring framework for BBEs under CSP management.

*2. DESCRIPTION OF NEED*

Bar-built estuaries, also termed river mouth lagoons, are unique and important coastal wetlands that form at the mouths of coastal watersheds. Connecting marine, freshwater and terrestrial ecosystems, BBEs are complex and dynamic systems that provide a great diversity of habitat and ecosystem services. Typically, during winter, high streamflows and strong predominant north swell energy keep the stream mouth open; while during summer, with

low streamflows and a concomitant shift to south swells, a sandbar forms at the mouth of the stream forming a lagoon disconnected from the ocean. As a result, water is impounded providing increased aquatic and inundated marsh habitat during the otherwise drier summer months. BBEs can thereby provide important nursery habitat for aquatic species from both the freshwater and marine ecosystems, as well as salmonid species that migrate between the two, including species protected under the Endangered Species Act. Additionally, wetlands adjacent to the BBE channel are important for many resident and migratory species.

Although they make up 51% of the estimate 539 coastal confluences in California, the complexity and dynamics of the BBEs along the coast, and thus the extent, diversity and dynamics of ecological services are poorly understood. Further, many BBEs have been physically altered or mismanaged resulting in dramatic losses in wetland acreage and ecological services. New threats to BBEs, and the services they provide, include artificial management of bar closure periodicity for flood control and water quality objectives, and potential future hydrologic alterations due to climate change impacts and increased demand for freshwater. Some beach bar alterations are unavoidable within urbanized systems due to legal water diversions, flood protection, and protection of coastal infrastructure. However, there are a number of BBE characteristics that can be improved even in the face of inevitable human alterations. State regulatory and resource management agencies (specifically CSP and CCC) are routinely tasked with making management decisions, through permitting of development projects and/or artificial breaching activities, without a full understanding of the impact these projects have on BBE resources and species. Further, many management decisions are made with a single species management focus. Thus, there is a critical need for a more detailed understanding of these dynamic ecosystems individually and in terms of their shared characteristics in order to direct management, conservation and restoration actions, and ensure the long-term health and productivity of these coastal ecosystems.

Directing management of such a widespread habitat of critical importance can be challenging due to multi-agency management and a lack of standardization in both assessment and management approaches. Two State agencies, however, have unique regulatory and management responsibilities for many of these systems. Specifically, 128 of the 278 total BBEs in California are managed by CSP, making that agency the most significant

stakeholder in BBE management. CSP Natural Resources Division provides leadership and policy to protect and improve management of natural resources, including wetlands, for the preservation of biological diversity. However, due to budget cuts, CSP is unable to allocate enough resources to maintain park units and staff is stressed to meet management objectives. Therefore, decision-making tools that provide a cost-effective assessment and management approach are needed to better prioritize limited resources and ensure that coastal wetland management objectives are better met coast wide.

A recent informal survey of CSP district managers identified three technical limitations that undermine efficient and effective management of coastal wetland resources; 1) limited hydrologic and biotic information documenting the current functions of these systems (specifically bar breaching periodicity), 2) lack of consistency in wetland management strategies among regional park districts, and 3) an inconsistent permitting process among coastal regions due to inconsistent habitat information and management objectives among district offices of State management and regulatory agencies.

CCWG has worked with state and federal stakeholders (e.g. RB3, EPA, CWMW and L2 committee) to establish cost-effective, standardized assessment methods to assist management of all of California's diverse wetlands, including BBEs. Under previous funding, CCWG deployed data loggers at 11 BBEs throughout California that monitored and recorded a set of standard physical parameters for guiding management and permitting decisions. These data loggers characterize the commonalities and specifics of BBE hydrology and how these relate to ecological services. Initial data from the 11 site sampling array has successfully characterized the natural and unnatural breaching periodicity of the systems. These data will enable staff to address socio-political pressures to breach these systems for flood control reasons by more precisely replicating natural breaching events' magnitude and timing. The replication of this pilot project to additional systems, using an expanded assessment and modeling program, will enable CSP and other state agencies (potentially Caltrans & CCC) to make management decisions that reflect a more comprehensive understanding of these systems and the numerous services they provide.

By collecting data for BBEs under CSP management, and training staff in the methodologies, this project will provide the information necessary for CSP resource managers to devise better strategies to enhance BBE habitats

for multiple objectives (including upgrades to visitor services) and species, prioritize limited restoration resources, and evaluate the effectiveness of implemented actions and management strategies in ways that can minimize and properly mitigate possible impacts both to the species and ecosystem services. Similarly, CCC staff will benefit from technical services aimed at improving permit administration by defining appropriate uses for standardized habitat condition reporting and the integration of baseline hydrologic and biotic data generated by the CSP monitoring program.

i. Outreach for project need:

a. Attendance at the 2/4/14 CWMW meeting determined that this project proposal will initiate two CWMW Priorities identified for 2014: 1) Develop network/clearinghouse of estuary monitoring efforts and 2) Incorporate CRAM and wetland maps into the estuary portal for coastal systems.
b. phone calls to discuss project need and collaboration on this project took place-
    i. with CSP staff on the following dates- 12/5/12, 5/20/13, 2/14/14, 3/5/14
    ii. with CCC staff on the following dates- 2/14/14, 3/12/14, 3/14/14
    iii. with CEMW member agencies on the following dates- 2/26/14, 3/3/14, 3/18/14
c. An informal survey of CSP district staff was completed in February 2014 that asked the following six questions (see section F for summary of answers):
    i. How can a more comprehensive inventory of BBE resources under CSP management aid in the management of these systems?
    ii. What management issues are most prevalent for staff regarding river mouth habitats (fish, marsh and riparian habitat, breaching and water quality)?
    iii. What types of permitting issues do staff commonly face with BBEs?
    iv. Would having a statewide assessment of resources and tools to evaluate future restoration goals and mitigation needs aid staff management and permitting objectives?
    v. How could BBE assessment data aid in project prioritization and grant application success?
    vi. Is there any interest in CRAM training for CSP staff?

*3. OUTPUTS, OUTCOMES AND RESULTS*

i. Outputs (project products)

The project will result in the following products:

1. A comprehensive list of BBE wetland resources that CSP manages to aid restoration and management decisions.
2. The following data will be collected for 30 selected priority sites to aid State Parks management and restoration prioritization:
    a. Habitat condition assessed using the California Rapid Assessment Methodology (CRAM)
    b. Environmental data from a BBE monitoring system tracking dynamics of the extent of aquatic habitat and inundated marsh plain related to mouth formation and breaching events. Time-lapse documentation of

mouth bar dynamics

c. Historical habitat change analyses and maps quantifying the percent change and percent loss of different functional wetland habitats between mid 1800s and current day conditions
d. Watershed stressor analysis including: watershed acreage, land ownership (e.g. % CSP), percent of different management / land uses, percent restored, protected species present

3. A Wetland Habitat Restoration and Management Prioritization Tool for CSP utilizing the EPA Level 1-2-3 Monitoring Framework.
4. Transfer of methodologies to via several 5-day trainings open to all CSP and CCC staff
5. BBE Wetland and Watershed Assessment and Management Guidance Document to aid in wetland permitting and mitigation for CSP and CCC staff.
6. Transfer of "Guidance Document" to via several 1-day meetings open to CCC Staff at regional offices.
7. Development of a BBE database for the storage and exchange of data between regional research partnerships (i.e. Bodega Marine Lab and UCLA) and resource managers actively involved in BBE research and management.
8. Populate California Estuaries Portal with inventory of estuaries in California, habitat data collected at selected BBE 30 sites in State Parks, fish nursery habitat data assembled by TNC on selected set of estuaries as part of their West Coast Nursery Habitat Assessment, as well as general habitat and environmental data from additional estuaries based on CWMW and CEMW guidance.

ii. Outcomes (project objectives)

The two main objectives of our project are: 1) to document BBE wetland habitats and the ecosystem services they provide through a standardized approach, and 2) to enhance state capacity to assess, manage, and restore these valuable wetland habitats. Specific outcomes within these two objectives include:

1. Successful collaborating of universities, conservation NGOs, and local, state and federal agencies to advance the understanding of estuarine wetland habitats and facilitate better management, restoration and conservation of wetland resources
2. Informing CSP and the CCC of the dynamics and complexities of BBE ecological functioning
3. The development of new technological and scientific approaches to assess wetland condition useful for state management and regulatory agencies
4. The facilitation of CSP and adoption of an EPA Level 1-2-3 monitoring framework for management and assistance with permitting of projects associated with BBEs
5. The facilitation of better management of nearly half of BBE wetlands throughout California via the development of novel and cost-effective management prioritization tools for CSP
6. Dataset that will allow for enhanced and more unified permitting process for BBE management through use of standard data sets and tools
7. Enhanced public knowledge of California's estuarine wetland resources through the population of the California Estuaries Portal with a full inventory (and select data sets) of estuaries in California.

iii. Link to EPA Strategic Plan

This project works to accomplish one of EPA's two specific objectives within the water elements of the strategic

plan to *Protect and Restore Watersheds and Aquatic Ecosystems.* Our project has two goals. First, we will *advance scientific approaches to inform the understanding of the ecological functioning* of BBE *wetland habitats* throughout California. Our collaborative team is comprised of respected scientists forefront in their field, each of whom bring specialized skills which will support each task described below, as well as a shared general understanding of these complex wetland habitats. Secondly, from results of our increased understanding we will develop management prioritization tools *to enhance the capacity of CSP and regulatory agencies to better manage wetland resources*. As a result our project will be one of the first to facilitate the adoption of the Level 1-2-3 assessment framework into a department of the California Natural Resources Agency. Thus, our project forwards two EPA cross-cutting fundamental strategies of *advancing science, research and technological innovation; and strengthening state partnerships*. Results of this project will *increase our understanding of wetland habitats*, *enhance state ability to better manage wetland resources* and thereby work to *protect, restore and increase wetlands of California*.

iv. Tracking Outputs and Outcomes

We will hold quarterly partnership meetings to ensure appropriate development of approaches, accomplishment of outputs and objectives, and that each of these meets the needs of CSP and other project partners. This will allow regional collaborators to share specific expertise to facilitate effective accomplishment of project outputs and outcomes in a timely manner, and an adaptive management approach to efficiently maintain progress if obstacles are encountered. We will provide EPA with bi-annual progress reports. An updated project Quality Assurance Project Plan (QAPP) will govern the technical aspects of all data collection.

*4. PROJECT TASKS*

TASK 1 - Project administration and reporting

*Description*: The purpose of this task is to regularly monitor progress and success on each project task, manage grant funds and deliverables, provide bi-annual written updates to the EPA Project Manager, and submit a final report upon project completion. This task also includes the updating of our monitoring and quality assurance project plan (QAPP) to govern the collection of new data.

*Deliverables*: Bi-annual reports; updated QAPP/Monitoring Plan; Final Report to summarize all available data,

habitat maps, Level 1-2-3 condition analyses, and the CSP management prioritization tool.

TASK 2 – Collection and dissemination of standard habitat and hydrologic information for BBE wetlands

*Description:* As a first step in informing better wetland management, we will create a comprehensive georeferenced database for all BBEs. This authoritative database, for which the format and data fields will be established through meetings with project partners (CSP, CCC, Southern California Coastal Water Research Project (SCCWRP), UCD, UCLA) and groups active in estuarine research (e.g., Santa Monica Bay Restoration Commission-SMBRC), will support management decision making, project prioritization and permit application efficiency. For the 128 CSP managed BBEs, it will include landscape data such as watershed acreage, land ownership (e.g. percent owned by CSP), percent of different management / land uses, percent restored, protected species present, importance of the BBEs as a nursery habitat for protected and commercial fisheries, habitat condition, and environmental data (e.g., precipitation, stream flow, temperature, etc.). The database will allow ease of update when new data become available, including results of this proposed project below, to enable tracking changes through time. This database effort is part of a larger collaborative effort (The Nature Conservancy, Pacific Marine Estuarine Fish Habitat Partnership, CCWG, San Francisco Estuary Institute, SCCWRP, and others) to develop a comprehensive geo-database for all coastal confluences of the western United States. These partners are contributing resources and capacity to develop a coast-wide authoritative database of all estuaries, river mouths, and BBEs to support a variety of efforts including a coast-wide nursery assessment, a forage fish habitat assessment, and a national fish habitat assessment. Pairing this proposed data collection program with this larger effort will provide greater context.

The California Estuary Monitoring Workgroup (CEMW) is devoted to evaluating existing estuarine resource monitoring, assessment and reporting efforts, and working to enhance those efforts so as to improve the delivery of water quality and ecosystem health information to the user, in the form of the California Estuaries Portal. CCWG will work with the CEMW, SCCWRP, and research collaborators at UCLA and UCD to select a subset of the assembled data (e.g., estuary location, habitat condition, active research, etc.) to be uploaded to the California Estuaries Portal along with a full inventory of estuaries. This subtask will greatly enhance the breadth of information available for

public viewing on the California Estuaries Portal, which is now primarily focused on the San Francisco Bay Estuary.

*Deliverables:* A populated BBE database, subset of data uploaded to the California Estuaries Portal

TASK 3 – BBE Wetland Habitat Management Prioritization Tool Development

*Description:* To develop the Level 1-2-3 analysis and management prioritization tools, 30 BBEs will be selected with input from State Park staff and project collaborators for data collection. All BBEs will be under CSP ownership, and each will have some degree of CSP management of watershed lands.

Marsh Plain Habitat Inundation Map: Manual and automated sampling equipment will be deployed at 30 priority BBEs to compile necessary data on the timing and dynamics of: sandbar formation, oceanic forcing influencing bar dynamics, freshwater flow dynamics (where available), the lateral extent of inundated marsh plain, area and volume of aquatic habitat, and water quality of aquatic habitat. These data will be used to develop inundation maps of the marsh plain habitats to aid development of superior breaching strategies and evaluate the vulnerability of each estuary to sea level rise. These survey results can be combined with that of researchers at UCLA, lead by Dr. Rich Ambrose, who are currently working on developing guidance on the best management practices for restoration of southern California coastal wetlands in the face of climate change. Methods for CCWG data collection include:

- *Pressure transducers* will be deployed and maintained to monitor water depth and temperature within each BBE to monitor the dynamics of aquatic habitats, quantify breaching events, and relate natural and anthropogenic influences to these processes.
- *Elevation surveys* utilizing a GPS, scope and stadia rod will be conducted at each of the BBEs of the beach berm and associated marsh plain habitats.
- *Additional Level 3 metrics* may be incorporated based on CSP input and needs. This project can pull from research currently underway by the SMBRC establishing standard protocols for Level 3 wetlands monitoring, especially for restoration projects, funded by USEPA Region 9.

CRAM: The condition of each of the 30 BBEs will be assessed using the *recently validated* BBE CRAM module.

Historical Habitat Change Analysis will be conducted using U.S. Coastal Survey Topographic Sheets from the mid 1800s, and current day aerial photographs. This subtask will use the same methodologies and build off of T-sheet interpretation efforts already completed in the Southern California Bight by SCCWRP to include BBEs in central and northern California. The images will be interpreted to quantify the percent cover of different functional habitat types during each time period. Percent loss, percent change and absolute loss of each functional habitat

type as well as total wetland habitat will then be quantified for each BBE using ArcGIS.

Landscape level investigations of stressor influences on the watersheds of each estuary will be calculated using Watershed Delineation Tools in ArcGIS, drawing from SCCWRP's stressor characterization study completed for the statewide bio-objectives program funded by USEPA Region 9. Anthropogenic stressors that have deleterious effects on the physical and ecological functions of BBEs will be recorded and evaluated for 30 systems within CSP Management including: altered freshwater input, channel modification, watershed stressors, and urban encroachment/loss of floodplain habitat, stream mouth management, contaminants and nutrient enrichment. The percent cover and density of different stressors (% various landuses, dams, etc.) to wetland habitats will be calculated for each BBE at four different scales, which represent different relationships of stressors to the BBE. Our previous research has shown that CRAM landscape metrics are useful in highlighting pertinent scales of influence of different stressors, aiding management decisions.

Level 1-2-3 analysis and management prioritization tools: Existing and newly collected data (Tasks 2 and 3), will be analyzed to prioritize management of watershed and estuarine features to improve local, watershed, and BBE ecological functioning. A series of correlation, linear mixed-effects modeling and multivariate analyses will be conducted on all hydrologic, CRAM, and watershed stressor data to investigate the relationship between observed BBE condition and watershed stressors at different scales. Results will be compared to our existing and growing dataset of approximately 60 BBEs throughout California to allow the for ranking of each BBE as to its overall condition, the specifics of that condition, and stress. Results will be used to prioritize and facilitate analyses of different management actions and to potentially evaluate project success for use in permitting development/restoration projects (specifically 404 and CCC). This will allow very specific direction of management to improve upstream habitat with resulting specific responses in the downstream BBE. High priority systems can then easily be elucidated for immediate allocation of restoration or conservation actions.

*Deliverables:* For each of the 30 BBEs: Marsh plain habitat map indicating levels of water inundation over time, CRAM assessment; wetland maps from the mid 1800's and current day; quantified percent loss and percent change for different functional wetland habitat types; degree of stressors quantified at four different watershed

scales; statistics of BBE condition, watershed stressors, and restoration potential; a Management Prioritization Tool for CSP to implement and track restoration and management actions through time.

TASK 4 – Outreach and Tech Transfer

*Description:* Through the partnerships supported by this project, all information, methodologies, and management tools will be transferred to CSP staff. Specifically, CCWG plans to aid CSP use of resource inventory data, CRAM assessment data, and hydrology data for resource management development. This will be done in two ways:

- Present project findings and management prioritization tool to CSP district managers and work with CSP to define strategies to prioritize management of BBEs based on habitat condition, threats and state program objectives.
- Provide several 5-day trainings to CSP staff (12 coastal districts) on field application of CRAM and other tools utilized, and use of L1-2-3 monitoring strategy as a management prioritization tool.

We will work with SCCWRP (with input from CCC staff) to draft a Guidance Document that outlines the appropriate use of consistent data sets (BBE specific and CRAM in general) in the coastal permitting process. CCWG will then hold trainings open to all CCC staff in use of CRAM and other tools developed as a part of this grant for evaluating potential impacts of development projects and expected results of mitigation options.

*Deliverables:* BBE Wetland and Watershed Assessment and Management Guidance Document to aid in wetland permitting and mitigation; CSP and regulatory agency staff trained in CRAM, CSP staff trained in Management Prioritization Tool; CSP adoption of a Level 1-2-3 wetland monitoring framework (standardized inter-park monitoring strategy for wetland resources).

*5. PARTNERSHIP INFORMATION*

The tasks outlined in this proposal will be completed as a collaboration among CCWG, SCCWRP, CSP, and CEMW and will conducted in close coordination with research partners at UCLA and UCD (Bodega Marine Lab), and the L2 committee of the CWMW. CCWG will take the lead on project administration and technical coordination, will develop the comprehensive database, and will be responsible for equipment deployment and monitoring, and data compilation and management. CCWG will conduct CRAM, historical habitat, and watershed assessments, and Level 1-2-3 analyses in coordination with local CSP staff. SCCWRP will assist with data collection, drafting of the

Guidance Document on use of State Wetland Monitoring program tools to aid wetland permitting and mitigation, and coordination with the CEMW. This project will partner with CSP and CCC staff to ensure that environmental data collected, and management tools developed meet their needs.

*6. MILESTONE SCHEDULE (assumes a January 1, 2015 start date)*

| Task | 2015 | | | | 2016 | | | | 2017 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1: Project Coordination and Reporting | | | | | | | | | | | | |
| 1.1: quarterly partnership meetings | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| 1.2: bi-annual progress and status reports to EPA | | ■ | | ■ | | ■ | | ■ | | ■ | | ■ |
| 1.3: update quality assurance project plan (QAPP) | | ■ | ■ | ■ | | | | | | | | |
| 1.4: Produce Final Report and publications | | | | | | | | | | | ■ | ■ |
| 2: Collection and dissemination of habitat and hydrologic information | | | | | | | | | | | | |
| 2.1: meet with partners to establish db format and interested parties | ■ | ■ | | | | | | | | | | |
| 2.2: compile data | | ■ | ■ | ■ | | | | | | | | |
| 2.3: build and populate database | | | | ■ | ■ | ■ | ■ | | | | | |
| 2.4: upload data to California Estuaries Portal | | | | | | | | | ■ | ■ | ■ | ■ |
| 3: Habitat Management Prioritization Tool | | | | | | | | | | | | |
| 3.1: site selection | ■ | | | | | | | | | | | |
| 3.2: deployment and retrieval of loggers | | ■ | ■ | | | | | | | | | |
| 3.3: marsh plain surveys | | ■ | ■ | | | | | | | | | |
| 3.4: CRAM assessments | | ■ | ■ | | | | | | | | | |
| 3.5: historical habitat change analysis | | | | ■ | ■ | | | | | | | |
| 3.6: watershed stressor analysis | | | | ■ | ■ | | | | | | | |
| 3.7: analysis of Level 1-2-3 data | | | | | | ■ | ■ | ■ | | | | |
| 3.8: development of habitat management prioritization tool | | | | | | | | | ■ | ■ | ■ | |
| 4: Outreach and Tech Transfer | | | | | | | | | | | | |
| 4.1: train CSP in Prioritization Tool methodologies | | | | | | | | | | ■ | ■ | |
| 4.2: CCC and Park manager workshops – tech and tool transfer | | | | | | | | | | | ■ | ■ |
| 4.3: develop Guidance Document | | | | | | | | | | | ■ | ■ |

*7. DETAILED BUDGET WORKPLAN*

Summary of SF424 Budget information:

- Personnel: The budget for the proposed project includes $173,945 in grant support for CCWG staff.
- Fringe Benefits: The budget for the proposed project includes $20,071 in grant funds for fringe benefits.
- Travel: The budget provides for $17,000 to cover travel expenses to conduct meetings with estuary partners around the state (4 meetings @ $200/meeting) for completing Task 2, to conduct meetings with State Park district staff and collect field data (60 site visits @ $220/site) associated with Task 3, and to hold trainings (2 trainings @ $1500/training) with State Park staff and conduct outreach at agency meetings associated with Task 4.
- $107,600 in matching fund support will come from CSP ($40,000), DWR ($40,000), Delta Conservancy ($10,000), and CCR ($17,600). Please see their letters of support for specifics on match support.
- Supplies: The budget includes $17,000 in grant funds to cover supply expenses for all tasks. This will comprise general office supplies ($1900), a field computer for data collection ($1000), and field sampling supplies including temperature/depth loggers (30 @ $320), logger deployment materials, and photo monitoring equipment (30 @ $150).
- Other: Subaward costs include $29,000 in grant funds to SCCWRP to carry out portions of Tasks 2 (assistance with estuary data assembly in southern California), 3 (assistance with data collection in

southern California), and 4 (assistance with outreach to state agencies and with writing Guidance Document).

- Total Direct Charges: Total direct charges represent a total of $257,015 from grant funds
- Total Indirect Charges: Total indirect charges represent a total of $65,784 from grant funds
- Total Request: Total requested funding is $322,800

Budget by Task:

| Task No. | Description | EPA Grant Funds | Matching Funds | Total Funds |
|---|---|---|---|---|
| 1 | Project Administration and Reporting | $44,500 | | $44,500 |
| 2 | Collection and dissemination of habitat and hydrologic information | $41,400 | $50,000 | $41,400 |
| 3 | Habitat Management Prioritization Tool | $183,700 | $47,600 | $183,700 |
| 4 | Outreach and Tech Transfer | $46,700 | $10,000 | $46,700 |
| | | | | |
| | Subtotal | $316,300 | | |
| | Additional Indirect Costs from subcontracts | $6,500 | | |
| | TOTAL | $322,800 | $107,600 | $430,400 |

Annual Expense Schedule:

| Object Class Category | Yr-2015 | Yr-2016 | Yr-2017 | EPA Funds | Matching Funds | Total Funds |
|---|---|---|---|---|---|---|
| Personnel | $72,182 | $57,640 | $44,123 | $173,945 | $107,600 | $173,945 |
| Fringe Benefits (10.7% yr1, 11.7% yr 2, 12.7% yr 3) | $7,723 | $6,744 | $5,604 | $20,071 | | $20,071 |
| Travel | $8,000 | $6,000 | $3,000 | $17,000 | | $17,000 |
| Equipment | | | | | | |
| Supplies | $8,500 | $8,500 | | $17,000 | | $17,000 |
| Contractual | | | | | | |
| Construction | | | | | | |
| Other | $9,000 | $10,000 | $10,000 | $29,000 | | $29,000 |
| Total Direct | $105,405 | $88,883 | $62,727 | $257,015 | | $257,015 |
| Indirect Charges | $31,565 | $20,510 | $13,709 | $65,784 | | $65,784 |
| TOTAL | $136,970 | $109,394 | $76,436 | $322,800 | $107,600 | $430,400 |

*8. RESTORATION DEMONSTRATION PROJECT INFORMATION: N/A*

*9. PROGRAMMATIC CAPABILITY / TECHNICAL EXPERIENCE / QUALIFICATIONS*

CCWG has played a key role in the development and implementation of California's wetland and riparian toolkit over the last 12 years. This includes acting as a co-principal on the development and validation of several CRAM modules, assisting in developing the state's S&T program, and developing riparian monitoring and assessment tools for the Central Coast RWQCB. CCWG staff also plays key technical support roles on the CWMW and the L2 Committee. Ross Clark has over 15 years experience developing assessment tools and partnerships to enhance Central Coast water quality. He managed the CCC NPS wetlands program for 6 years, and serves on multiple

technical advisory committees focused on enhancing coastal aquatic resources. Kevin O'Connor has 9 years experience working in wetland and aquatic ecology and restoration. Kevin O'Connor helped develop and validate the CRAM methodology for BBE and furthered novel analysis tools linking landscape scale stressors and CRAM metrics to direct and prioritize better management of wetland resources. He has served on several local and statewide technical advisory committees for wetland assessment and management. Dr. Stein is the principal scientist of the SCCWRP Biology Department and has 21 years experience in developing and implementing wetland monitoring and assessment programs. He currently serves as co-chair of the Statewide CWMW, which developed and is overseeing implementation of the statewide wetland monitoring and assessment plan. Additionally Dr. Stein, and other staff at SCCWRP have extensive experience studying California estuaries and have close ties with state agencies responsible for their management. These skills will be very beneficial for tasks 2, 3, and 4 of this project. The Nature Conservancy provides expertise and infrastructure as well as established partnerships with private, state, and federal stakeholders to ensure a complete geodatabase of BBE wetland data and resources.

*10. TRANSFER OF RESULTS*

The purpose of this project is to transfer results to CSP staff to enhance their capacity to better manage wetlands. This will be accomplished throughout the project as well as a final task (Task 4) of transferring results and methodologies to CSP and regulatory staff through trainings and multi-regional seminars. Additionally, much of the data generated from this research will be available through our comprehensive database and the California Estuaries Portal (Task 2). Results and summary reports will be uploaded to CCWG and CRAM websites. Finally, we will present results at scientific and management conferences, and publish results in peer reviewed journals.

C. PAST PERFORMANCE:

EPA grants listed below have included performance measures that identified environmental outputs and outcomes. In all cases CCWG was able to successfully complete the agreements on time. The grant activities have greatly contributed to progress towards achieving the environmental objectives of CCWG and the CWMW. These outcomes included the increased protection and restoration of wetlands and riparian resources via: 1) Development of wetland maps/inventory; 2) Wetland restoration and planning; 3) Development of monitoring and assessment

tools; 4) Demonstration of wetlands monitoring with level 1-2-3 tools; 5) Strengthen coordination between regulatory and resource management agencies; 6) Trainings to wetland scientists, resource managers and agency staff.

EPA Award # WS-00T03801-0 $267.347 2009-2013
Phase II - Moro Cojo Slough Restoration and Management Plan Implementation

EPA Award # CD-00T20101-0 $333,197 2009-2013
Using New Methodologies to Assess Seasonal Estuaries along the California Coastline

EPA Award # CD-00T54301-0 $350,000 2010-2013
Standardization of the CRAM Update Process, Manuals and Training Materials through the L2 Committee of the California Wetlands Monitoring Workgroup

EPA Award # CD-00T83101-0 $349,403 2012-2015 (Current)
Development of New Tools to Assess Riparian Extent and Condition-A Central Coast Pilot Study

EPA Award # CD-99T05801-0 $314,882 2013-2016 (Current)
Support for L2 Committee Priority Tool Development: Validation of Three CRAM Modules

D. QA/QC

A QAPP governing necessary environmental data collection was produced as part of the grant CD-00T20101-0. This document will be updated for this project and provided to EPA.

E. INVASIVE SPECIES CONTROL

Efforts will be taken to ensure activities do not facilitate the introduction or spread of invasive species pursuant to Executive Order 13112. If invasive species are promoted in any way, rapid response will be implemented. This project will utilize the information and suggested resources for invasive species detection methods and coordinated responses to these threats available from the National Invasive Species Information Center, USDA National Agriculture Library.

F. Optional Attachments:

i. Letters of support: CSP, CCC, The Delta Conservancy, Dept. of Water Resources, SCCWRP, CEMW, CWMW, UCLA, UCD-Bodega Marine Lab, The Nature Conservancy

ii. Resumes: Ross Clark, Kevin O'Connor, Eric Stein

## Other Attachment File(s)

| FileName | MimeType |
|---|---|
| cccsupport1001753758.pdf | application/pdf |
| CCRsupport1001753759.pdf | application/pdf |
| DCsupport1001753760.pdf | application/pdf |
| dwrsupport1001753761.pdf | application/pdf |
| SCCWRPsupport1001753764.pdf | application/pdf |
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| parkssupport1001753772.pdf | application/pdf |
| davissupport1001753774.pdf | application/pdf |
| uclasupport1001753775.pdf | application/pdf |
| watersupport1001753776.pdf | application/pdf |

STATE OF CALIFORNIA – THE RESOURCES AGENCY EDMUND G BROWN JR, *Governor*

**CALIFORNIA COASTAL COMMISSION**
SOUTH CENTRAL COAST AREA
89 SOUTH CALIFORNIA ST., SUITE 200
VENTURA, CA 93001
(805) 585-1800

Leana Rosetti, Wetland Grants Lead
Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

26 March 2014

RE: Support for the Central Coast Wetland Group (CCWG) proposal "Development of a Bar-Built Estuary Monitoring System and Resource Management Prioritization Tool for California State Parks"

Dear Ms Rosetti:

Please accept this letter of support for CCWG's *Development of a Bar-Built Estuary Monitoring System and Resource Management Prioritization Tool for California State Parks* proposal.

The proposed project will serve clearly identified assessment needs for California State Parks and will also contribute to statewide wetland assessment goals found in the California Wetland and Riparian Area Monitoring Program. The standardized monitoring and assessment tools proposed for this project will also provide valuable information on the condition and function of bar-built estuaries with a focus on managing breaching events to better mimic natural conditions. Condition and function information collected for individual estuaries will be useful in assessing the ecological effects of projects proposed for those areas.

The CCWG has been an active, consistent and productive participant in statewide stream and wetland surface monitoring method development efforts in coordination with California Wetlands Monitoring Workgroup. Commission staff supports the proposed project as a positive step in the implementation of the state's Wetland Work Plan and as an aid in developing protective coastal wetland management approaches.

Sincerely,

Jonna Engel

Jonna Engel, PhD
Ecologist
California Coastal Commission
89 South California Street
Ventura, CA 93001
(805) 585-1800

Coastal Conservation and Research, Inc.
a non-profit organization
PO Box 543
Moss Landing, CA 95039

March 24, 2014

Grant Review Committee
U.S. Environmental Protection Agency, Region 9
CWA §I04(bX3) WETLANDS PROGRAM DEVELOPMENT GRANT

RE: Letter of Support for the grant proposal entitled "Development of a Bar-built estuary monitoring system and resource management prioritization tool for California State Parks and Coastal Commission"

Dear Grant Review Committee,

This is to confirm that Coastal Conservation and Research Inc. (CC&R) will be delighted to collaborate with Ross Clark and the CCWG on an EPA-funded project entitled: "Development of a Bar-built estuary monitoring system and resource management prioritization tool for California State Parks". We are excited to work on a project to help EPA meet goals of no "net loss", and satisfying EPA Core Elements of "Monitoring and Assessment" and "Restoration and Protection" by enhancing coastal estuarine research and providing State Parks with both assessment and management tools. Bar-built estuaries like other wetlands provide diverse species and ecosystem services, yet have suffered great losses throughout the state, and are at risk of future alteration and habitat loss. State Parks is a major stakeholder, which manages nearly half of these important habitats.

Through environmental planning, scientific research, habitat restoration, and education, CC&R seeks to improve and protect the environmental quality for both the land and its inhabitants. CC&R carefully researches its projects, works responsibly, and is committed to producing the most desirable environmental improvements. Thus we are excited about this collaborative project to enhance coastal estuarine research through development of a bar-built estuary monitoring program for State Parks.

If funded, we CCR will help provide matching funds in the amount of $17,600 through the Ocean Protection Council funded efforts to assess sea level rise impacts to estuaries and the outer coastline around the Monterey Bay area.

I offer my enthusiastic support for CCWG's proposal. If you have specific questions or require additional information, please contact me at joakden@gmail.com.

Sincerely,

James Oakden
Director

SACRAMENTO - SAN JOAQUIN
**DELTA** CONSERVANCY
*A California State Agency*



March 26, 2014

Leana Rosetti, Wetland Grants Lead
Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Re: Sacramento-San Joaquin Delta Conservancy Support for the Central Coast Wetlands Group's Proposal for the FY2014 Region 9 Wetland Program Development Grants

Dear Ms. Rosetti,

On behalf of the Sacramento-San Joaquin Delta Conservancy (Conservancy), I am pleased to support the proposal submitted by the Central Coast Wetlands Group (CCWG) titled "Development of a Bar-built estuary monitoring system and resource management prioritization tool for California State Parks." The Conservancy is a member agency of the California Estuary Monitoring Workgroup (CEMW), which is devoted to evaluating existing estuarine resource monitoring, assessment and reporting efforts, and working to enhance those efforts so as to improve the delivery of water quality and ecosystem health information to the user, in the form of the California Estuaries Portal. The proposed project will further the work of the CEMW to communicate information on the health of key habitats, such as bar-built estuaries, to decision makers and the public.

The CEMW recognizes the importance of bar-built estuaries as a population of wetlands in California. They provide critical habitat for many commercially important and endangered species, such as the anadromous salmonid species that migrate through the San Francisco Bay-Delta Estuary. A uniform approach to monitoring and a management prioritization tool, as proposed by the project, are fundamental to protecting these important wetlands.

Through its participation in the CEWM, the Conservancy is supportive of this project and will contribute matching funds of $10,000 in staff time to support the project. The Conservancy looks forward to working with the CEMW and CCWG to incorporate key information on bar-built estuaries into the California Estuaries Portal.

Sincerely,

Shakoora Azimi-Gaylon
Assistant Executive Officer

**DEPARTMENT OF WATER RESOURCES**
DIVISION OF ENVIRONMENTAL SERVICES
3500 INDUSTRIAL BOULEVARD
WEST SACRAMENTO, CA 95691

March 26, 2014

Leana Rosetti, Wetlands Grants Lead
Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

RE: California Department of Water Resources support for the Central Coast Wetlands Groups' Proposal for the FY2014 Region 9 Wetland Program Development Grants

Dear Grant Review Committee:

On behalf of the California Department of Water Resources (DWR), Division of Environmental Services (DES), I am pleased to support the proposal submitted by the Central Coast Wetlands Group (CCWG) titled "Development of a bar-built estuary monitoring system and resource management prioritization tool for California State Parks." The Bay-Delta Monitoring and Analysis (BDMA) unit of DES, is a member agency of the California Estuary Monitoring Workgroup (CEMW), which is devoted to evaluating existing estuary resources monitoring, assessment, and reporting efforts. The CEMW is working to expand the information available on California's estuaries and share this information with the public on our new Estuaries Portal at http://www.mywaterquality.ca.gov/eco_health/estuaries/

The CEMW recognizes the importance of bar-built estuaries, and their wetland habitats in California. They provide critical habitat for many commercially important and endangered species, such as the anadromous salmonid species that migrate through the San Francisco Bay-Delta Estuary. A uniform approach to monitoring and management, as proposed by this project, to protect wetlands should contribute to the broader understanding of estuary health throughout California

Through its participation in the CEMW, the BDMA unit of DWR is supportive of this project and will contribute matching funds of $40,000 in staff time to support the project. We look forward to working with CCWG and CEMW to incorporate key information on bar-built estuaries into the California Estuaries Portal.

Sincerely,

Shaun Philippart
Chief, Bay-Delta Monitoring and Analysis

SOUTHERN CALIFORNIA COASTAL WATER RESEARCH PROJECT
*A Public Agency for Environmental Research*

March 22, 2014

Leana Rosetti, Wetland Grants Lead, Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Ms. Rosetti:

Please accept this letter of support for the Central Coast Wetlands Group's (CCWG) application entitled, "Development of a Bar-built estuary monitoring system and resource management prioritization tool for California State Parks". We strongly endorse this proposal and hope to collaborate with the CCWG should it be funded.

Bar built estuaries are the most common coastal wetland in central and southern California, yet the fundamental processes that should inform restoration design are poorly understood. The proposed project would provide scientific information that would be used to inform management and restoration of these important coastal ecosystems. Our agency has invested heavily over the years in improving the science of wetland management through our work with the California Wetlands Monitoring Workgroup (CWMW) and the southern California Wetlands Recovery Project (WRP). The proposed project would leverage past efforts and support our ongoing wetland management objectives at both the regional and statewide level.

We have a long, successful history of working with the CCWG. They consistently provide high quality work and commitment to achieving both project goals and the larger statewide goals supported by individual projects. I have no doubt in their ability to successfully complete the proposed project. Should the project be funded we plan to assist the CCWG with fieldwork in southern California and through ongoing technical coordination.

I offer my enthusiastic support for CCWG's proposal. If you have specific questions or require additional information, please contact me at 714-755-3233 or erics@sccwrp.org.

Sincerely,

Eric Stein

Eric D. Stein, Dr.Env.
Principal Scientist, Biology Department

The Nature Conservancy
Protecting nature. Preserving life.™

California Coastal and Marine Program
99 Pacific Street, Suite 200G
Monterey, CA 93940
(831) 333-2045

March 25, 2014

Leana Rosetti, Wetland Grants Lead
Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

**Re: Support for the grant proposal entitled: "Development of a bar-built estuary monitoring system and resource management prioritization tool for California State Parks."**

Dear Grant Review Committee,

I am writing to articulate The Nature Conservancy's (TNC's) support for Central Coast Wetlands Group's (CCWG's) proposed project entitled: *"Development of a bar-built estuary monitoring system and resource management prioritization tool for California State Parks."* The project would serve an important role to increase the understanding of critical wetland habitats and help a state agency increase its capacity to better manage these resources, thereby helping EPA meet its management goals. Bar Built Estuaries (BBEs) are an important – but poorly understood – type of wetland, providing a diversity of species and ecosystem services. This project would help to inform our understanding of BBEs and the services they provide, and would specifically provide information, assessment methodologies, and management tools to State Parks, which manages nearly half of these important habitats throughout California.

TNC is particularly excited about this project because it aligns closely with a larger collaborative effort of which we are a part. TNC, Pacific Marine Estuarine Fish Habitat Partnership (PMEP), CCWG, San Francisco Estuary Institute, Southern California Coastal Water Research Project, and others are working together to develop and create a comprehensive geo-database for all coastal confluences on the West Coast. These partners are contributing resources and capacity to develop a coast-wide authoritative database of all estuaries, river mouths, and BBEs to support a variety of efforts including a coast-wide fish nursery habitat assessment, a forage fish habitat assessment, and a national fish habitat assessment. Thus, building from this collaborative endeavor CCWG has the resources and capacity to create a comprehensive georeference database of resources managed by State Parks and to further develop a valuable management prioritization tool. We are excited about products of our collaborative research directly being applied to management strategies to increase state management capacity and better protect California's valuable natural wetland resources.

In sum, TNC is pleased to support this project. Please feel free to contact me if you have any questions.

Sincerely,

Walter Heady, Ph.D.
Coastal Marine Ecologist

Explore the System

Campus Addresses

Common Questions

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Experts

Advocacy and Institutional Relations

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Leadership

The Mission of the CSU

Milestones

Map of Campus Locations

Map to the Office of the Chancellor

Public Affairs

Quick Facts

Home

## About the CSU

The individual California State Colleges were brought together as a system by the Donahoe Higher Education Act of 1960. In 1972 the system became The California State University and Colleges and in 1982 the system became The California State University. Today the campuses of the CSU include comprehensive and polytechnic universities and, since July 1995, the California Maritime Academy, a specialized campus.

The oldest campus—San Jose State University—was founded in 1857 and became the first institution of public higher education in California. The newest campus—California State University, Channel Islands—opened in fall 2002, with freshmen arriving in fall 2003.

Responsibility for the California State University is vested in the Board of Trustees, whose members are appointed by the Governor. The Trustees appoint the Chancellor, who is the chief executive officer of the system, and the Presidents, who are the chief executive officers on the respective campuses.

The Trustees, the Chancellor and the Presidents develop systemwide policy, with actual implementation at the campus level taking place through broadly based consultative procedures. The **Academic Senate** of the California State University, made up of elected representatives of the faculty from each campus, recommends academic policy to the Board of Trustees through the Chancellor.

Academic excellence has been achieved by the California State University through a distinguished faculty, whose primary responsibility is superior teaching. While each campus in the system has its own unique geographic and curricular character, all campuses, as multipurpose institutions, offer undergraduate and graduate instruction for professional and occupational goals as well as broad liberal education. All of the campuses require for graduation a basic program of "General Education-Breadth Requirements" regardless of the type of bachelor's degree or major field selected by the student.

The CSU offers more than 1,800 bachelor's and master's degree programs in some 357 subject areas. Many of these programs are offered so that

students can complete all upper-division and graduate requirements by part-time late afternoon and evening study. In addition, a variety of teaching and school service credential programs are available. A limited number of doctoral degrees are offered jointly with the University of California and with private institutions in California. In 2005, the CSU was authorized to independently offer Doctor of Education (Ed.D.) degree programs for educational administrators.

With almost 447,000 students, who were taught by some 45,000 faculty, the system awards about half of the bachelor's degrees and a third of the master's degrees granted in California. The CSU has awarded nearly 2.9 million bachelor's, master's and joint doctoral degrees since 1961.

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Last Updated: January 25, 2012

# EDUCATION CODE
# SECTION 66600-66609

66600. The California State University shall be administered by a board designated as the Trustees of the California State University, which is hereby created.

66601. Whenever, in any law, the term "Trustees of the State College System of California" or "Trustees of the California State University," or the term "chief executive officer of the state college system" is used, such terms shall be deemed to mean the Trustees of the California State University and the Chancellor of the California State University, respectively.

66602. (a) The board shall be composed of the following five ex officio members: the Governor, the Lieutenant Governor, the Superintendent of Public Instruction, the Speaker of the Assembly, and the person named by the trustees to serve as the Chancellor of the California State University; a representative of the alumni associations of the state university, selected for a two-year term by the alumni council, California State University, which representative shall not be an employee of the California State University during the two-year term; and 16 appointive members appointed by the Governor and subject to confirmation by two-thirds of the membership of the Senate.

(b) (1) Two students from the California State University, who shall have at least sophomore year standing at the institutions they attend, and who remain in good standing as students during their respective terms, shall also be appointed by the Governor to serve on the board for two-year terms.

(2) In the selection of students as members of the board, the Governor shall appoint the students from lists of names of at least two, but not more than five, persons furnished by the governing board of any statewide student organization that represents the students of the California State University and the student body organizations of the campuses of the California State University. Any appointment to fill a vacancy of a student member shall be effective only for the remainder of the term of the student member's office that became vacated.

(3) The term of office of one student member of the board shall commence on July 1 of an even-numbered year and expire on June 30 two years thereafter. The term of office of the other student member of the board shall commence on July 1 of an odd-numbered year and expire on June 30 two years thereafter. Notwithstanding paragraph (1), a student member who graduates from his or her college or university on or after January 1 of the second year of his or her term of office may serve the remainder of the term.

(4) (A) During the first year of a student member's term, a student member shall be a member of the board and may attend all meetings of the board and its committees. At these meetings, a student member may fully participate in discussion and debate, but may not vote. During the second year of a student member's term, a

student member may exercise the same right to attend meetings of the board, and its committees, and shall have the same right to vote as the members appointed pursuant to subdivision (a).

(B) Notwithstanding subparagraph (A), during the first year of a student member's term, the student member may vote at a board meeting if the other student member is absent from that meeting due to illness, a family emergency, or a medical emergency.

(5) Notwithstanding paragraph (4), if a student member resigns from office or a vacancy is otherwise created in that office during the second year of a student member's term, the remaining student member shall immediately assume the office created by the vacancy and all of the participation privileges of the second-year student member, including the right to vote, for the remainder of that term of office.

(6) A student member shall have his or her tuition fee waived for the duration of his or her term of office.

(c) (1) A faculty member from the California State University, who shall be tenured at the California State University campus at which he or she teaches, shall also be appointed by the Governor to serve on the board for a two-year term. In the selection of a faculty member as a member of the board, the Governor shall appoint the faculty member from a list of names of at least two persons furnished by the Academic Senate of the California State University.

(2) The faculty member of the board appointed by the Governor pursuant to this subdivision shall not participate on any subcommittee of the board responsible for collective bargaining negotiations.

(3) The term of office of the faculty member of the board shall commence on July 1, and shall expire on June 30 two years thereafter.

66602.5. All meetings of the trustees shall, except as otherwise provided in Section 66602.7, be subject to Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code.

66602.7. Notwithstanding Article 9 (commencing with Section 11120) of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code:

(a) (1) Action taken by a committee of the trustees and final action by the full board of trustees, on a proposal for the compensation package of the following executive officers shall occur in an open session of each of those bodies, and shall include a disclosure of the compensation package and rationale for the action:

(A) The Chancellor of the California State University.

(B) The president of an individual campus.

(C) A vice chancellor.

(D) The treasurer.

(E) The general counsel.

(F) The trustees' secretary.

(2) Members of the public shall be afforded the opportunity to address the committee and full board on the proposal during or before consideration of the action item.

(b) Discussion by a committee of the trustees of, and action on, an executive compensation program or policy, and any final action by the full board of trustees on that program or policy, shall occur in open session of each of those bodies.

(c) Compensation for the principal officers of the trustees and

the officers of the university shall include salary, benefits, perquisites, severance payments (except those made in connection with a dismissal or a litigation settlement), retirement benefits, or any other form of compensation.

66603. The term of the appointive trustees shall be eight years.

66604. The expiration of a trustee's term of office as a member of the State Board of Education or any earlier vacancy in that office shall create a vacancy in his trusteeship, unless the term ascribed thereto by lot has already expired. In case of any vacancy on the board of trustees, the Governor shall appoint a successor for the balance of the term as to which such vacancy exists.

66604.5. Each appointive trustee shall receive actual and necessary travel expenses and one hundred dollars ($100) for each day he or she is attending to official business.

66605. If the trustees and the Regents of the University of California both consent, the Chancellor of the California State University shall sit with the Regents of the University of California in an advisory capacity and the President of the University of California shall sit with the trustees in an advisory capacity.

66606. The Trustees of the California State University shall succeed to the powers, duties, and functions with respect to the management, administration, and control of the state colleges heretofore vested in the State Board of Education or in the Director of Education, including all powers, duties, obligations, and functions specified in Article 2 (commencing with Section 90010) of Chapter 8 of Part 55, and all obligations assumed by the State Board of Education pursuant to that article prior to July 1, 1961.

On and after July 1, 1961, the Trustees of the California State University shall have full power and responsibility in the construction and development of any state university campus, and any buildings or other facilities or improvements connected with the California State University. The powers shall be exercised by the Trustees of the California State University notwithstanding Chapter 10 (commencing with Section 14950) of Part 5.5 of Division 3 of Title 2 of the Government Code and Chapter 1 (commencing with Section 10100) of Part 2 of Division 2 of the Public Contract Code, except that the powers shall be carried out pursuant to Chapter 2.5 (commencing with Section 10700) of Part 2 of Division 2 of the Public Contract Code known as the California State University Contract Law.

The Trustees of the California State University may accept gifts of land, or gifts of options on land, may accept and expend gifts of money for the purchase of land or options on land, and may enter into negotiations and contracts for the purchase of land for a future state university site in the vicinity of any of the areas specified

in the recommendations contained in the Master Plan for Higher Education printed on page 42, paragraph 5, Senate Journal (Regular Session) for February 1, 1960, except that the gifts, expenditures, negotiations, and contracts shall not obligate the expenditure of any state funds for the purchase of the land or for development on the land, unless the Legislature subsequently approves the obligation by appropriating the funds for that specific purpose.

Any acceptance, acceptance and expenditure, or negotiations and contract may be conditioned upon an automatic reversion back to the donor or automatic termination of the negotiations and contract if a new state university is not established at a specific site prior to a specific date designated by the trustees and the donor or the trustees and the person or corporation with whom the trustees are negotiating or contracting.

66606.2. Recognizing the unique mission and functions of the California State University among the departments, agencies, and boards of the state, it is the intent of the Legislature that both of the following occur:

(a) Before legislation that, by its terms, applies to the state or its agencies, departments, or boards, may apply to the California State University, the legislation should be compatible with the mission and functions of the California State University.

(b) The California State University not be governed by any statute enacted after January 1, 1997, that does not amend a previously applicable act and that applies generally to the state or to state agencies, departments, or boards, unless the statute expressly provides that the California State University is to be governed by that statute.

66607. The California State University shall be entirely independent of all political and sectarian influence and kept free therefrom in the appointment of its trustees and in the administration of its affairs, and no person shall be debarred admission to any department of the state university on account of sex.

66609. (a) All state employees employed on June 30, 1961, in carrying out functions transferred to the Trustees of California State University by this chapter, except persons employed by the Director of Education in the Division of State Colleges and Teacher Education of the State Department of Education, are transferred to the California State University.

(b) Nonacademic employees transferred under this section shall retain their respective positions in the state service, together with the personnel benefits accumulated by them at the time of transfer, and shall retain the rights attached under the law to the positions that they held at the time of transfer. All nonacademic positions filled by the trustees on and after July 1, 1961, shall be by appointment made in accordance with Chapter 5 (commencing with Section 89500) of Part 55, and persons so appointed shall be subject to Chapter 5.

(c) (1) The trustees shall provide, or cooperate in providing, academic and administrative employees transferred by this section with personnel rights and benefits at least equal to those

accumulated by them as employees of the state colleges, except that any administrative employee may be reassigned to an academic or other position commensurate with his or her qualifications at the salary fixed for that position. An administrative employee so reassigned shall have a right to appeal from that reassignment, but only as to whether the position to which he or she is reassigned is commensurate with his or her qualifications. All academic and administrative positions filled by the trustees on and after July 1, 1961, shall be filled by appointment made solely at the discretion of the trustees.

(2) The trustees shall establish and adjust the salaries and classifications of all academic, nonacademic, and administrative positions and neither Section 19825 of the Government Code nor any other provision of law requiring approval by a state officer or agency for salaries or classifications shall be applicable thereto. In establishing and adjusting salaries, consideration shall be given to the maintenance of the state university in a competitive position in the recruitment and retention of qualified personnel in relation to other educational institutions, private industry, or public jurisdictions that are employing personnel with similar duties and responsibilities.

(3) The establishment and adjustment of salaries for nonacademic employees shall be in accordance with the standards prescribed in Section 19826 of the Government Code. The trustees, however, shall make no adjustments that require expenditures in excess of existing appropriations available for the payment of salaries. Chapter 5 (commencing with Section 89500) of Part 52, relating to appeals from dismissal, demotion, or suspension, shall be applicable to academic employees.

(d) Persons excluded from the transfer made by this section shall retain all the rights and privileges conferred upon civil service employees by law. Personnel of state agencies employed in state university work other than those transferred by this section, and who are employed by the trustees prior to July 1, 1962, shall be provided with personnel rights and benefits at least equal to those accumulated by them as employees of those state agencies.

(e) If the provisions of this section are in conflict with the provisions of a memorandum of understanding reached pursuant to Chapter 12 (commencing with Section 3560) of Division 4 of Title 1 of the Government Code, the memorandum of understanding shall be controlling without further legislative action, except that, if the provisions of a memorandum of understanding require the expenditure of funds, the provisions shall not become effective unless approved by the Legislature in the annual Budget Act.

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**ROSS P CLARK IV**
**DIRECTOR OF THE CENTRAL COAST WETLANDS GROUP**
**MOSS LANDING MARINE LABS**
**RCLARK@MLML.CALSTATE.EDU 831-771-4411**

## EDUCATION

**Moss Landing Marine Laboratories**
Masters of Science, Marine Sciences; Ecology June 1996

**University of California, Santa Barbara**
Bachelor of Arts Degree. Aquatic Biology Major June 1990

## SUMMARY

**Environmental Program Coordinator and Coastal Scientist** with broad-based experience in coastal water quality and wetland restoration and managment programs including work on: citizen and state water quality and wetland monitoring programs, watershed management planning, wetland restoration for habitat and water quality benefits, environmental steering committees and technical advisory committees, regional environmental planning and support of state program. Strong background in the implementation of State environmental objectives defined by the NPS program, California Wetland Monitoring Council, and Critical Coastal Areas program.

## RELEVANT WORK EXPERIENCE

**Director of the Central Coast Wetlands Group** July 2010-present
Charged with developing regional programs to improve the restoration and management of wetland resources on the Central Coast. Manages a team of six field scientists responsible for state wetland monitoring and regional wetland restoration program implementation. Plays a leadership role in the California Wetland Monitoring Workgroup tasked with developing the tools and programs to evaluate the condition of California's wetlands and the programs in place to protect them. Worked closely with local muniticpaliteis and land owners to integrate wetland restoration and construction of treatment wetlands into regional water quality and land use plans. Has been an active member of the Greater Monterey Integrated Regional Water Management Program and the lead on a number of stakeholder driven environmental programs and technical advisory groups (e.g. Critical Coastal Areas, Moro Cojo, IRWMP, Elkhorn Slough, Reclamation Ditch management plan).

**Climate Change Action Coordinator, City of Santa Cruz** October 2007-present
Tasked with developing the city strategic plan for reducing green house gas emissions, establish programs to encourage reductions from city businesses and residence and identify key threats and appropriate responses to climate change and sea level rise. Focusing on a multi-faceted program to partners with all sectors of the local population. Analyzing short and long-term options for the adoption of renewable energy sources, including wind and solar PV.

**Environmental Scientist, California Coastal Commission** 1998-2010

- Central Coast staff representative for the Non-Point Source Program responsible for development of State water quality and wetland restoration programs. Helped to establish the California Wetland Monitoring Workgroup and development of the California Rapida Assessment Method for Wetlands to expand the State's capacity to improve water quality and wetland habitat and the ability to evaluate success.

**Watershed Restoration Monitoring Coordinator, CSU Monterey Bay** 1995-1998

- Contract Manager for EPA/State Water Resources Control Board-319 grant (1995&1997 FFY). Responsible monitoring efforts for all watershed restoration projects including pollutant load reduction, wetland ecology, GIS surveying, native plant survivorship and abundance, photo and video documentation.

## Contract List - Primary Authorship and Management

| Year | Title | | Budget | Fund |
|---|---|---|---|---|
| 2001 | Central Coast Wetland GIS Website | | 300K | EPA |
| 2003 | Coast Wide Snapshot Day Program | | 160K | NPS |
| 2004 | Continued Support of Snapshot Day on the Central Coast | | 12K | Whale |
| 2005 | Implementation of California Rapid Assessment Method for Wetlands | | 120K | EPA |
| 2005 | State Funded Wetland Restoration Project Inventory | | 24K | NPS |
| 2005 | Central Coast Water Quality Data Synthesis Project | | 250K | NPS |
| 2006 | Integration of Citizen Monitoring Data into State Programs | | 350K | NPS |
| 2006 | State Wetland Monitoring Program Implementation on the Central Coast | 250K | EPA | |
| 2007 | Central Coast Wetland Working Group Science Symposium | | 85K | EPA |
| 2007 | Phase II State Wetland Restoration Project Inventory | | 27K | NPS |
| 2007 | City of Santa Cruz Climate Action Program | | 100K | City |
| 2008 | Phase II Implementation of Moro Cojo Restoration Plan | | 320K | EPA |
| 2009 | New Methodologies to Assess Seasonal Estuaries | 250K | EPA | |
| 2010 | Greater Monterey Regional IRWM Planning Grant | | 775k | DWR |
| 2011 | Greater Monterey Regional IRWM Implementation Grant | | 4.2M | DWR |
| | | Total | $6.80M | |

### PUBLICATIONS


Christopher W. Solek, Martha A. Sutula, Eric D. Stein, Chad Roberts, Ross Clark, Kevin O'Connor, and Kerry J. Ritter (2012) Determining the Health of California's Coastal Salt Marshes Using Rapid Assessment. Water Science and Technology.

Stein, Fetscher, Clark, Wiskind, Grenier, Sutula, Colins, & Grosso (2009) Validation of a wetland rapid assessment method: use of EPA's level 1-2-3 Framework for method testing and refinement. Wetlands. Vol. 29, No. 2, pp. 648-665

Sutula, Stein, Collins, Fetscher & Clark (2006) A practical guide for the development of a wetland assessment method: The California experience. Journal of American Water Resources Association.

Clark, R. P. (2004) Effects of shade from multiple kelp canopies on an understory algal assemblage. Journal of Experimental Marine Biology and Ecology. 267, 107-119.

Fairey, R. et al. (1997) Organochlorines and other environmental contaminants in muscle tissues of sportfish collected from San Francisco Bay. Marine Pollution Bulletin. Vol. 34, No. 12, pp. 1058-1071.


### Reports & Documents:


California Rapid Assessment Method (CRAM) for Wetland and Riparian Areas. 2006

Wetland and Riparian Restoration Management Measure Tracking. Draft report 2005. California Coastal Commission & Tetratech

Statewide Snapshot Day Report 2003. Monterey Bay National Marine Sanctuary & California Coastal Commission www.mbnms.nos.noaa.gov/monitoringnetwork/events.html

Critical Coastal Areas identification and implementation strategy. Final report 2002. www.coastal.ca.gov/nps/cca-strategy.pdf

Snapshot Day Citizen Monitoring Report 2000&2001. Monterey Bay National Marine Sanctuary. www.mbnms.nos.noaa.gov/monitoringnetwork/events.html

California's nonpoint source pollution control program. 2000. State Water Resources Control Board & California Coastal Commission. www.coastal.ca.gov/nps/

Northern Salinas Valley watershed restoration plan. 1997. AMBAG & Watershed Institute.

Comprehensive watershed management solutions to nonpoint source pollution in the Salinas Valley. 1997. Final Report. Regional Water Quality Control Board. (primary author)

Natividad Creek wetland and upland habitat restoration plan (Phase II). 1997. Creative Environmental Solutions & Moss Landing Marine Labs.

Comprehensive watershed management: Quality Assurance Project Plan. 1996. State Water Resources Control Board. (primary author)

Contaminant levels in fish tissue from San Francisco Bay. 1995. San Francisco Regional Water Quality Control Board, State Water Resources Control Board, California Department of Fish and Game. Included GIS data analysis.

Contaminant levels in sediment of San Diego Bay. 1995. State Water Resources Control Board, California Department of Fish and Game, Environmental Protection Agency, Moss Landing Marine Labs. Included GIS data analysis.

March 26th, 2014

From: Stephanie Fong, Chair
California Estuary Monitoring Workgroup
State and Federal Contractors Water Agency
1121 L Street, Suite 806
Sacramento, CA 95814

To: Leana Rosetti, Wetland Grants Lead
Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

**SUBJECT: SUPPORT FOR THE CENTRAL COAST WETLAND GROUP PROPOSAL FOR *DEVELOPMENT OF A BAR-BUILT ESTUARY MONITORING SYSTEM AND RESOURCE MANAGEMENT PRIORITIZATION TOOL FOR CALIFORNIA STATE PARKS***

Dear Ms. Rosetti:

Please accept this letter of support from the California Estuary Monitoring Workgroup (CEMW) of the California Water Quality Monitoring Council (CWQMC) for *Development Of A Bar-Built Estuary Monitoring System and Resource Management Prioritization Tool for California State Parks.* The project will develop and demonstrate an approach for applying the USEPA's "Level 1-2-3" monitoring approach to State Parks management of bar-built estuaries (BBEs).

The primary product of the proposed project will provide a prioritization method to direct management of wetlands by California State Parks. This alone is worthy of support, but the methodologies to be developed will also:

- enhance assessment methodologies that will be applicable to bar-built estuaries statewide,
- be consistent with statewide wetland and surface water monitoring and assessment plans,
- be useful to many ongoing management, assessment, monitoring, restoration and regulatory processes throughout coastal California, and
- contribute to the statewide reference network for wetlands.

The products of the project are intended to provide the information necessary for State Parks managers to devise better strategies to enhance BBE habitats for multiple objectives, but it is likely that managers, scientists, and regulatory agencies associated with BBEs statewide, from urban harbors to wild coast

settings, will find these tools to be helpful in achieving the diverse management goals those settings entail.

The proposed project will further develop wetland assessment methods called for in Phase 1 of the State Water Resources Control Board's proposed Wetland Protection Policy. The proposed project may also help with application of a watershed approach in permitting for the project area, as required by Clean Water Act section 404(b)(1) and the Corps of Engineers' 2008 mitigation rule and as envisioned in the proposed California State Water Board wetland policy.

The proposed project will provide a logical and needed extension of this effort. The CEMW will continue to collaborate with Central Coast Wetland Group (CCWG) to provide technical review and support. We note with approval that the proposed project is also be supported by the Level 2 Assessments Committee (L2) of the California Wetlands Monitoring Workgroup (CWMW), since the proposed project is a logical and necessary step in the improvement of coordination between CEMW and our sister work groups.

The CEMW has recently released the initial launch of the California Estuary Portal. The Estuary Portal is the sixth My Water Quality internet portal to connect decision makers and the pubic with water quality and ecosystem health information. The initial focus of the Portal is to evaluate the health of the living resources in the San Francisco Estuary, through the monitoring data collected by local agencies. The CCWG has been an active, consistent and productive participant in statewide stream and wetland surface monitoring method development efforts and have continue to provide support in broadening the scope of the Estuary Portal. Our short-term plans include adding depth to the habitat section, where products from this effort would greatly advance and enhance that section of the Estuary Portal. We are confident that, if funded, the project will be successfully completed.

For these reasons, the CEMW strongly supports the proposed project as a positive step in the implementation of the state's Wetland Work Plan and as a key contribution to wetland policy development.

Please feel free to contact me at sfong@sfcwa.org or (916) 400-4840 if you have any questions about our support of this proposal.

Sincerely,

Stephanie Fong, Chair
California Estuary Monitoring Workgroup

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION
P.O. Box 942896 • Sacramento, CA 94296-0001
(916) 653-6725
Major General Anthony L. Jackson, USMC (Ret), *Director*

March 27, 2014

Leana Rosetti, Wetland Grants Lead
Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

RE: Letter of Support for *Development of a California bar-built estuary monitoring system and resource management prioritization tool for California State Parks*

Dear Ms. Rosetti:

On behalf of the California Department of Parks and Recreation (California State Parks), Natural Resources Division, I am writing to express my support for the project titled *Development of a California bar-built estuary monitoring system and resource management prioritization tool for California State Parks*. This project, if funded, will provide California State Parks with much-needed data and tools to support adaptive management of many important, and sensitive, wetlands.

The Department's mission, in part, is to preserve the State's biological diversity and protect its most valued natural resources. State Park System lands span more than 340 miles of coastline and include 128 of California's 278 bar-built estuaries. These estuaries represent a unique interface between freshwater and marine systems, supporting diverse plant and animal assemblages and providing critical ecological services. Consequently, the Department has a major role in the protection, restoration, and interpretation of the State's wetlands and a vested interest in effective wetland management.

In managing these complex and dynamic systems, practitioners face challenges that require science-based solutions. Specifically, bar-built estuaries on State Park System lands are experiencing unprecedented anthropogenic stressors and alterations, some of which include physical modifications (e.g., bar breaching and/or bar construction) undertaken for specific purposes. Given the interconnectedness of estuarine components, alterations to a single component can have repercussions for others. Currently, the Department lacks a dedicated monitoring program to evaluate wetland conditions and respond to threats in a systematic way. The proposed project's inventory and assessment of selected bar-built estuaries on State Park System lands, combined with its end products that directly inform management decisions, would be a major step toward increasing and preserving the quantity and quality of California's wetlands.

California State Parks is enthusiastic about taking part in a project whose fundamental goal is to support cost-effective and standardized approaches to wetland management. Should the project be funded, California State Parks plans to contribute $40,000 to $70,000 in in-kind support. This figure includes direct in-kind support for the project research as well as contributions of data and findings from a suite of related efforts.

I strongly urge you to support this funding request.

Sincerely,

Jay Chamberlin, Chief
Natural Resources Division

UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO SANTA BARBARA • SANTA CRUZ

**BODEGA MARINE LABORATORY**
PO Box 247, BODEGA BAY, CA 94923
PHONE: (707) 875-1930 or 875-2211
FAX: (707) 875-2009
EMAIL: jlargier@ucdavis.edu

28 March 2014

Grant Review Committee
U.S. Environmental Protection Agency, Region 9
CWA §I04(bX3) WETLANDS PROGRAM DEVELOPMENT GRANT

Dear Grant Review Committee,

Support for proposal entitled *"Development of a bar-built estuary monitoring system and resource management prioritization tool for California State Parks"*

The Coastal Oceanography Group at UC Davis supports the proposed project entitled: *"Development of a bar-built estuary monitoring system and resource management prioritization tool for California State Parks and Coastal Commission."* This project will serve an important role of increasing the understanding of critical wetland habitats and directing better management of resources to help EPA meet goals of no "net loss", as well as satisfying EPA Core Elements of "Monitoring and Assessment" and "Restoration and Protection."

Bar-built estuaries are an important (but largely overlooked) habitat in California as well as across the country. They provide habitat to a diversity of species and yield valued ecosystem services. But the dynamics of these services remain poorly understood. This project will inform our understanding of bar-built estuaries and the services they provide. We appreciate that the project will provide funds to continue and expand prototype monitoring of systems in northern California. This will further our knowledge of these important habitats and also provide valuable educational opportunities. This project is directed at providing information, assessment methodologies and management prioritization to California State Parks, a major stakeholder that manages nearly half of the bar-built estuaries in California. We are pleased to be a part of this project.

Thank you for your support, please feel free to contact me if you have any questions.

Sincerely,

John L. Largier
Professor of Oceanography

UNIVERSITY OF CALIFORNIA, LOS ANGELES

**UCLA**

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SANTA BARBARA • SANTA CRUZ

DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY
621 CHARLES E. YOUNG DRIVE SOUTH
BOX 951606
LOS ANGELES, CALIFORNIA 90095-1606

FAX: (310) 206-3987

March 28, 14

RE: Letter of Support for the grant proposal entitled, *Development of a Bar-built estuary monitoring system and resource management prioritization tool for California State Parks*

Dear Review Committee,

I am very pleased to convey my enthusiastic support, and that of members of my laboratory and colleagues here at UCLA and in the southern California area, for the proposed project.

Bar-built estuaries (BBEs) are the numerically predominant form of estuary along the California Coast yet they receive little attention. Furthermore, they are also heavily impacted through a long history of filling and mouth manipulation for a wide range of purposes. My lab is in the forefront in the study of the genetics of taxa that specialize in these habitats. And we are active in developing methods and protocols to assess the dynamics of the bar/mouth-closure process, both with remote imagery, and through direct investigation of physical and biotic conditions during closure and breaching in these systems. We are currently engaged in a coastwide examination of historic maps and air photos to assess historic change and the closure dynamic of these systems. These efforts will provide a broader context for the observing system proposed here. We are eager to share our efforts and results in the context of the proposed research.

The work entailed in the proposed project will dramatically increase the body of data available to interpret the function BBEs and the services they provide. Clearly, this research is critically important from a variety of perspectives. These habitats benefit federally endangered California coastal lagoonal taxa such as steelhead in tidewater goby. Thus the research can be seen as directly enhancing the listing agencies (NMFS and USFWS respectively) in the fulfillment of their recovery plans. The engagement of state parks is also critically important as California State Parks are the primary stakeholders and managers for this class of estuarine habitat along the California coast. In this context the information provided through this research will directly influence the management of these systems, determine practical opportunities for the restoration of habitat in state parks, and facilitate the education of the public through state parks. Clearly, the project will increase understanding of critical wetland habitats and improve wetland resource management. It directly addresses EPAs "Core Elements" of monitoring, assessment and protection. In the longer term it has the potential to greatly enhance the prospects for successful restoration.

Again I am very excited about the prospect of participating in this research, and I am encouraged that a wider range of systems may be studied along the California Coast such that the heterogeneity of our natural heritage may be protected.

Sincerely,

David K. Jacobs
Professor
Ecology & Evolutionary Biology
UCLA

3/28/2014

Leana Rosetti, Wetland Grants Lead
Water Division (WTR-8)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

**SUBJECT: SUPPORT FOR THE CENTRAL COAST WETLAND GROUP PROPOSAL FOR *DEVELOPMENT OF A BAR-BUILT ESTUARY MONITORING SYSTEM AND RESOURCE MANAGEMENT PRIORITIZATION TOOL FOR CALIFORNIA STATE PARKS***

Dear Ms. Rosetti:

Please accept this letter of support from the 401 Certification and Wetlands Unit of the State Water Resources Control Board – Division of Water Quality for the Central Coast Wetland Group's (CCWG) project for the *Development Of A Bar-Built Estuary Monitoring System And Resource Management Prioritization Tool For California State Parks And Coastal Commission.* The project will develop and demonstrate an approach for applying the United States Environmental Protection Agency's "Level 1-2-3" monitoring approach to State Parks management of bar-built estuaries (BBEs).

The proposed project will serve clearly identified assessment needs for the California State Parks, but it will also contribute to statewide wetland assessment goals found in the California Wetland and Riparian Area Monitoring Program (WRAMP) and is consistent with the state's *Five Year Coordinated Work Plan for Wetlands Conservation Program Development* (http://www.mywaterquality.ca.gov/monitoring_council/wetland_workgroup/docs/cdfg_swrcb_wrkpln.pdf ).

The primary product of the proposed project will provide a prioritization method to direct management of wetlands by California State Parks and the California Coastal Commission. This alone is worthy of support, but the methodologies to be developed will also:

- enhance assessment methodologies that will be applicable to bar-built estuaries statewide,
- be consistent with statewide wetland and surface water monitoring and assessment plans, and
- be useful to many ongoing management, assessment, monitoring, restoration and regulatory processes throughout coastal California.
- contribute to the statewide reference network for wetlands

The products of the project are intended to provide the information necessary for State Park managers to devise better strategies to enhance BBE habitats for multiple objectives, but it is likely that managers, scientists, and regulatory agencies associated with BBEs statewide, from urban harbors to wild coast settings, will find these tools to be helpful in achieving the diverse management goals those settings entail.

The proposed project will further develop wetland assessment methods called for in Phase 1 of the State Water Resources Control Board's proposed Wetland Protection Policy. The proposed project may also help with application of a watershed approach in permitting for the project area, as required by Clean Water Act section 404(b)(1) and the Corps of Engineers' 2008 mitigation rule and as envisioned in the proposed California State Water Board wetland policy.

The proposed project will provide a logical and needed extension of this effort. State Water Board staff will continue to collaborate with CCWG to provide technical review. We note with approval that the proposed project is also be supported by the California Estuary Monitoring Workgroup, and that the project is consistent with guidance provided by the California Wetland Monitoring Workgroup (both are workgroups of the California Water Quality Monitoring Council).

The CCWG has been an active, consistent and productive participant in statewide stream and wetland surface monitoring method development efforts in coordination with the State and Regional Water Quality Control Boards, and with the Monitoring Council's workgroups. We are confident that, if funded, the project will be successfully completed.

For these reasons, we strongly support the proposed project as a positive step in the implementation of the state's Wetland Work Plan and as a key contribution to wetland policy development.

Please contact Bill Orme at (916) 341-5464 or bill.orme@waterboards.ca.gov, if you have any questions regarding our support for this project.

Sincerely,

Bill Orme
Senior Environmental Scientist
Chief, 401 Certification and Wetlands Unit

cc:
Kevin O'Connor,
Program Manager, Central Coast Wetlands Group
Moss Landing Marine Labs
8272 Moss Landing Rd.
Moss Landing, CA 95039

## BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 4040-0006

**SECTION A - BUDGET SUMMARY**

| Grant Program Function or Activity (a) | Catalog of Federal Domestic Assistance Number (b) | Estimated Unobligated Funds | | New or Revised Budget | | |
|---|---|---|---|---|---|---|
| | | Federal (c) | Non-Federal (d) | Federal (e) | Non-Federal (f) | Total (g) |
| 1. Wetland Program Development Grants | 66.461 | | | $322,800.00 | $107,600.00 | $430,400.00 |
| 2. | | | | | | $0.00 |
| 3. | | | | | | $0.00 |
| 4. | | | | | | $0.00 |
| 5. Totals | | | | $322,800.00 | $107,600.00 | $430,400.00 |

**SECTION B - BUDGET CATEGORIES**

| 6. Object Class Categories | GRANT PROGRAM, FUNCTION OR ACTIVITY | | | | Total (5) |
|---|---|---|---|---|---|
| | (1) Wetland Program Development Grants | (2) | (3) | (4) | |
| a. Personnel | $173,944.00 | | | | $173,944.00 |
| b. Fringe Benefits | $20,072.00 | | | | $20,072.00 |
| c. Travel | $17,000.00 | | | | $17,000.00 |
| d. Equipment | $0.00 | | | | |
| e. Supplies | $17,000.00 | | | | $17,000.00 |
| f. Contractual | $0.00 | | | | |
| g. Construction | $0.00 | | | | |
| h. Other | $29,000.00 | | | | $29,000.00 |
| i. Total Direct Charges (*sum of 6a-6h*) | $257,016.00 | | | | $257,016.00 |
| j. Indirect Charges | $65,784.00 | | | | $65,784.00 |
| k. TOTALS (*sum of 6i and 6j*) | $322,800.00 | | | | $322,800.00 |
| 7. Program Income | | | | | |

Standard From 424A (Rev. 7-97)
Prescribed by OMB Circular A-102

**Tracking Number:**

| SECTION C - NON-FEDERAL RESOURCES | | | | |
|---|---|---|---|---|
| (a) Grant Program | (b) Applicant | (c) State | (d) Other Sources | (e) TOTALS |
| 8. Wetland Program Development Grants | | | $107,600.00 | $107,600.00 |
| 9. | | | | $0.00 |
| 10. | | | | $0.00 |
| 11. | | | | $0.00 |
| 12. TOTAL (sum of lines 8-11) | | | $107,600.00 | $107,600.00 |

| SECTION D - FORECASTED CASH NEEDS | | | | | |
|---|---|---|---|---|---|
| | **Total for 1st Year** | **1st Quarter** | **2nd Quarter** | **3rd Quarter** | **4th Quarter** |
| 13. Federal | $136,972.00 | $34,243.00 | $34,243.00 | $34,243.00 | $34,243.00 |
| 14. Non-Federal | $107,600.00 | $26,900.00 | $26,900.00 | $26,900.00 | $26,900.00 |
| 15. TOTAL (*sum of lines 13 and 14*) | $244,572.00 | $61,143.00 | $61,143.00 | $61,143.00 | $61,143.00 |

| SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT | | | | |
|---|---|---|---|---|
| (a) Grant Program | FUTURE FUNDING PERIODS (Years) | | | |
| | (b) First | (c) Second | (d) Third | (e) Fourth |
| 20. TOTAL (*sum of lines 16-19*) | | | | |

| SECTION F - OTHER BUDGET INFORMATION | |
|---|---|
| 21. Direct Charges: | 22. Indirect Charges: Predetermined; base-257,015; idc 65,784 |
| 23. Remarks: | |





**Tracking Number:**